Claims

[c1] 1.In an image system, a method for controlling a relative movement between a substrate being exposed and a head of the image system, the method comprising:
moving the head relative to the substrate at a relatively fast speed while exposing a first portion of the substrate; and
moving the head relative to the substrate at a relatively slow speed while exposing a second portion of the substrate;
wherein the exposing of the first and second portions of the substrate occur during a first pass.

[c2] 2.The method of claim 1 further comprising:
upon completion of the first pass, rotating the substrate relative to the head; and
moving the head relative to the substrate while exposing a third portion of the substrate.

[c3] 3.The method of claim 1 further comprising:
moving the head relative to the substrate at a speed between the relatively slow speed and the relatively fast speed while exposing a third portion of the substrate;
wherein the exposing of the first, second, and third portions of the substrate occur during a first pass.

[c4] 4.The method of claim 1 wherein the movement moves a scan line for undertaking a scanning exposure of the substrate.

[c5] 5.The method of claim 4 wherein the image system is a digital photolithography system.

[c6] 6.A method for performing digital photolithography on a substrate, the substrate having a first portion with a first design resolution and a second portion with a second design resolution, the method comprising:
scanning the first portion of the substrate at a first speed; and
scanning the second portion of the substrate at a second speed, different from

the first;

wherein both the first and second portions are scanned on a single pass.

[c7] 7.The method of claim 6 wherein the step of scanning the first portion comprises:

moving the substrate relative to the head at a third speed in a first direction;

moving the head relative to the substrate at a fourth speed in the first direction while scanning the first portion of the substrate, wherein the first speed equals the sum of the third and fourth speeds; and

wherein the step of scanning the second portion comprises:

moving the head relative to the substrate at a fifth speed in a second direction opposite to the first direction while scanning the second portion of the substrate, wherein the second speed equals the difference of the third and fifth speeds.

[c8] 8.The method of claim 7 wherein the fourth and fifth speeds are the same.

[c9] 9.The method of claim 6 wherein the substrate has a third portion with the first design resolution, the method further comprising:

rotating the substrate relative to a pixel panel of the digital photolithography system;

scanning the third portion of the substrate at the first speed on a separate pass.

[c10] 10.The method of claim 9 wherein the first, second, and third portions are different portions of the substrate.

[c11] 11.Software for controlling the movement of a first motor for moving an image producing device during exposure of a substrate, wherein the substrate includes a plurality of circuit components arranged in rows and at least one horizontal component between consecutive rows of the circuit components, the software comprising instructions for:

moving the image producing device at a first speed and in a first direction while exposing the at least one horizontal component; and

moving the image producing device at a second speed and in a second direction opposite from the first direction while exposing the plurality of circuit

components;

wherein the substrate constantly moves at a third speed in the first direction during the exposing, and the third speed is greater than the second speed.

[c12] 12.The software of claim 11 wherein the first speed equals the second speed and the first direction is perpendicular to the rows.

[c13] 13.The software of claim 11 wherein the first speed equals zero.

[c14] 14.The software of claim 11 further comprising instructions for:

providing digital data to the image producing device corresponding to the movement of the image producing device at the first and second speeds.

[c15] 15.The software of claim 11 wherein the image producing device is a deformable mirror device (DMD).

[c16] 16.A digital photolithography system for exposing first and second portions of a substrate in a single pass, the system comprising:

a pixel panel;

means for moving the pixel panel relative to a substrate at a relatively fast speed while exposing the first portion of the substrate; and

means for moving the pixel panel relative to the substrate at a relatively slow speed while exposing the second portion of the substrate.

[c17] 17.The digital photolithography system of claim 16 wherein the pixel panel is a deformable mirror device (DMD).

[c18] 18.The digital photolithography system of claim 16 further comprising:

means for supplying data to the pixel panel while the pixel panel is being moved relative to the substrate, wherein a rate at which the data is supplied corresponds to the speed at which the pixel panel is being moved relative to the substrate.